

## The Physiological Cost of Walking in Overfat Girls

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### Summary

**Introduction.** Levels of physical fitness in obese children are often lower when compared to not obese. Thus the physiological cost of walking with different intensity may differ between slim girls and girls with excessive level of fat, causing a faster rate of fatigue accumulation in obese group.

**Aim.** Determination of physiological cost of locomotion effort - treadmill walking at various speeds in girls with excessive body fat (%) aged about 10 years.

**Material and methods.** The study covered 40 girls: 20 with excessive body fat ( $33.2 \pm 5.6\%$ F) and 20 with normal level ( $14.5 \pm 4.9\%$ F). They walked on a treadmill at two speeds (3.6 km/h, 4.8 km/h).

**Results.** Total  $\text{VO}_2$  (l/min) was by 22% and 26% ( $p < 0.05$ ) greater in girls with excessive body fat than among girls with average level. Girls in the studied group achieved lower values of  $\text{VO}_2/\text{kg}$  13% and 10%.  $\text{VO}_2$  values expressing the relative load on the body compared to maxima of this parameter were by 10% higher in the studied group than in the control during slow walk and ca. 14% ( $p < 0.05$ ) higher during faster walk. At both marching speeds the studied group exhibited significantly higher values of VE. No significant differences in HR were noted.

**Conclusions.** Higher values of  $\text{VO}_2$ , % $\text{VO}_{2\text{max}}$ , % $\text{VE}_{\text{max}}$  and % $\text{HR}_{\text{max}}$  during locomotion effort of overfat girls at the same intensity of test exertion indicate a higher cost of physical exercise incurred by overfat girls.